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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,255	12/20/2000	Christopher Chedgey	10734-003-999	8068
20583	7590	08/16/2004	EXAMINER	
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			KENDALL, CHUCK O	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/742,255	<b>Applicant(s)</b> CHEDGEY ET AL.	
	<b>Examiner</b> Chuck Kendall	<b>Art Unit</b> 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the application filed 04/29/04.
2. Claim 10 has been cancelled and claims 1 – 9, and 11 – 14 are pending.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Brotsky et al.  
USPN 5,490,246.

Regarding claim 14, Brotsky, anticipates dependency analysis system comprising:

a data structure stored in computer memory representing a hierarchy of graphs (Brotsky, Fig. 13);

a rendering system for displaying the hierarchy of graphs (Brotsky, Figs., 4, & 5);

a user interface responsive to a user action indicating a command to expand a displayed node, the user interface causing the rendering system to replace the displayed node with one or more embedded child nodes in response to the user action (Brotsky, 20: 15 – 20, for embedded child nodes, see internal nodes).

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 & 11 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotsky et al. USPN 5,490,246 in view of Ardoin et al. USPN 5,692,184.

Regarding claim 1, Brotsky discloses a software analysis tool (19: 3 – 5) comprising:

means for converting software entities and their relationships into a graph having a structure of nodes interconnected by edges (3:20 – 40, see interconnected nodes and edges, also see & 45 – 55), and an editor comprising means for allowing a user to edit the graph (3:5 – 10 and FIG.3, and associated text), wherein the graph includes a meta node and edge representing a child graph (14:40 – 45). Brotsky doesn't explicitly disclose wherein the software entities comprise software program code, although Brotsky does mention in 22: 45 – 50, source code for creating graph. However, Ardoin does disclose in 91: 30 – 45, numerous code for modifying and processing and representing the entities as claimed by Applicant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brotsky and Ardoin because, displaying or using code in an object oriented environment makes the system more programmable and efficient.

Regarding claim 11, Brotsky discloses a dependency analysis comprising;  
a node class for instantiating node objects in memory representing aspects of an analyzed system as nodes of a graph (17: 5 – 10, shows node class);

a connection class for instantiating connection objects in memory representing dependencies between aspects of an analyzed system (19:45 – 65, see Transducers and class) also see (18:25 – 30, for instances);

an edge class for instantiating edge objects representing collections of one or more connections or edges (17: 12, see graphics operator class). Brotsky doesn't explicitly disclose wherein the software entities comprise software program code, although Brotsky does mention in 22: 45 – 50, source code for creating graph. However, Ardoin does disclose in 91: 30 – 45, numerous code for modifying and processing and representing the entities as claimed by Applicant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brotsky and Ardoin because, displaying or using code in an object oriented environment makes the system more programmable and efficient.

Regarding claim 12, the dependency analysis system of claim 11, further comprising:

at least one subclass of the node class, the subclass being specific to a particular category of system (Brotsky, 19:45 – 55, see meta class and class of node).

5. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brotsky et al. USPN 5,490,246 in view of Dayani-Fard et al. USPN 6,339,776.

Regarding claim 13, Brotsky discloses, dependency analysis system recorded on a computer-readable medium, comprising:

a graph model data structure for storing dependency information derived through the abstraction layer from third-party tools (Brotsky, 19:35 – 40, see support for raster model and Quick draw and see 20:5);

a rendering system for providing a plurality of views of the graph model data structure (Brotsky, Fig.4 see viewer A and E). Brotsky doesn't explicitly

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disclose an abstraction layer for providing a uniform interface to third-party analysis tools however he does disclose the use of a third party tool for performing iconic programming see (Brotsky, 19: 35 – 40 see support for raster model and Quick draw). Dayani-Fard which discloses in a similar configuration and is analogous art does disclose the use of an external visualization and analytical tool. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brotsky and Dayani-Fard because, the use of external or third party programs would make the system more flexible.

6. Claims 2 & 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotsky et al. USPN 5,490,246 in view of Ardoin et al. USPN 5,692,184 as applied in claim 1, in view of Guy E. Blelloch Provably Efficient Scheduling for Languages with Fine-Grained Parallelism, Published 1999.

Regarding claim 2, Brotsky as modified by Ardoin discloses all the claimed limitations as applied in claim 1. The combination of Brotsky and Ardoin doesn't explicitly disclose bi-directionally folding and unfolding a graph between meta and child levels. However, Blelloch does disclose this feature (Pg, 311, 5.4.2 see bi-directional and siblings for child levels, also refer to pg. 301, 4.1. for unfolding). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brotsky and Ardoin with Blelloch, because folding and unfolding operations are a general practice in the graphics field and makes the program more modifiable.

Regarding claims 3, a software analysis tool as claimed in claim 1 or 2, wherein the editor comprises means for automatically generating fresh graph layouts after manipulation (Brotsky, 3:20 – 25).

7. Claims 4 – 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Brotsky et al. USPN 5,490,246 in view of Ardoin et al. USPN 5,692,184 as applied in claim 1 and 2, in view of Guy E. Blelloch, Provably Efficient Scheduling for Languages

with Fine-Grained Parallelism, Published 1999 and further in view of Perttunen USPN 6,359,635.

Regarding claim 4, Brotsky as modified by Brotsky, Ardoin and Blelloch discloses all the claimed limitations as disclosed in claim 1 or 2 as well as comprising software program code, as discussed above in claim 1. The combination of Brotsky, Ardoin and Blelloch explicitly discloses wherein the conversion means comprises a plurality of back-ends, each being associated with an aspect of a software system. However, Perttunen discloses a backend (21:58-60 for backend see database). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brotsky as modified by Ardoin and Blelloch with Perttunen because, it would allow the system to be able to retrieve or store information and hence make it more efficient.

Regarding claim 5, a software analysis tool as claimed in claim 4, wherein each back-end comprises means for converting the entities and the relationships of the associated aspect into nodes and edges of the graph (Brotsky, 3:30 – 45).

Regarding claim 6, a software analysis tool as claimed in claims 4, wherein the back-ends are associated with managers (Brotsky, 21:10 – 15, for manager see user and user selectable and viewing).

Regarding claim 7, a software analysis tool as claimed in claim 6, wherein the managers comprise means for routing commands between the editor and the back-ends (Brotsky, 21:58 – 60 for backend see database and modifying).

Regarding claim 8, a software analysis tool as claimed in claims 6, wherein each manager is associated with a group of back-ends associated with a group of back-ends (Brotsky, 21:58 – 60 for backend see database).

Regarding claim 9, a software analysis tool as claimed in claim 8, wherein the back-ends associated with a particular manager share a common interface and set of operations (Brotsky, 21:10 – 15, see user interface).



***Response to Arguments***

7. Applicant's arguments with respect to claims 1 – 9, & 11 - 14 have been considered but are moot in view of the new ground(s) of rejection.

**Correspondence Information**


8. Any inquires concerning this communication or earlier communications from the examiner should be directed to Chuck O. Kendall who may be reached via telephone at (703) 308-6608. The examiner can normally be reached Monday through Friday between 8:00 A.M. and 5:00 P.M. est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached at (703) 305-4552.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

For facsimile (fax) send to central FAX number 703-872-9306 and 703-7467240 draft.

CK.

  
TUAN DAM  
SUPERVISORY PATENT EXAMINER